

## SEQUENCE LISTING

<110> Maxygen ApS  
Maxygen Holdings Ltd.

<120> Single-Chain Polypeptides

<130> 0218us210

<150> US 60/245,727

<151> 2000-11-02

<160> 16

<170> PatentIn version 3.1

<210> 1

<211> 174

<212> PRT

<213> Homo sapiens

<400> 1

Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu Lys  
1 5 10 15

Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu Gln  
20 25 30

Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu Val  
35 40 45

Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser Cys  
50 55 60

Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His Ser  
65 70 75 80

Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile Ser  
85 90 95

Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala Asp  
100 105 110

Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala Pro  
115 120 125

Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala Phe  
130 135 140

Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser Phe  
 145 150 155 160

Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170

<210> 2  
 <211> 63  
 <212> DNA  
 <213> *Saccharomyces cerevisiae*

<400> 2  
 atgaaattga aaactgtag atctgctggt ttgtcttctt tgtttgcttc tcaagttttg 60  
 ggt 63

<210> 3  
 <211> 126  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> leader sequence

<400> 3  
 caaccaattg atgatactga atctcaaact acttctgtta atttgatggc tgatgatact 60  
 gaatctgctt ttgctactca aactaattct ggtggtttgg atgttggttg tttgatatcg 120  
 atggcc 126

<210> 4  
 <211> 522  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> DNA encoding G-CSF copy 1 in the single chain G-CSF dimer

<400> 4  
 actccattgg gtccagcttc ttctttgcca caatcttttt tgttgaaatg tttggaacaa 60  
 gttāgaaaaa ttcaaggtga tgggtgctgct ttgcaagaaa aattgtgtgc tacttataaa 120  
 ttgtgtcatc cagaagaatt ggttttgttg ggtcattctt tgggtattcc atgggctcca 180  
 ttgtcttctt gtccatctca agctttgcaa ttggctgggt gtttgtctca attgcattct 240  
 ggtttggttt tgtatcaagg tttgttgcaa gctttggaag gtatttctcc agaattgggt 300  
 ccaacttttg atactttgca attggatggt gctgattttg ctactactat ttggcaacaa 360

atggaagaat tgggtatggc tccagctttg caaccaactc aaggtgctat gccagctttt 420  
gcttctgctt ttcaaagaag agctggtggt gttttggttg cttctcattt gcaatctttt 480  
ttggaagttt cttatagagt tttagacat ttggctcaac ca 522

<210> 5  
<211> 531  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA encoding G-CSF copy 2 in the single chain G-CSF dimer

<400> 5  
accctctgg gcccgccag cagtctgcct cagagttttt tactgaaatg cttagaacag 60  
gtgcgtaaaa tccagggcga tggcgcggcc ctgcaggaaa aactgtgcgc gacctataaa 120  
ctgtgccatc ctgaagaact ggtcctgtta ggccatagct taggcatccc gtgggcgctt 180  
ctgagtagct gcccgagtca ggccctgcag ctggccggct gcctgagtca gttacatagt 240  
ggcttatttt tatatcaggg cttactgcag gcgttagaag gcattagtcc ggaactgggc 300  
ccgaccctgg ataccttaca gttagatgtc gcggattttg ccaccacat ttggcagcag 360  
atggaagaat taggcatggc gcctgcgtta cagcctaccc agggcgccat gcctgcgttt 420  
gcgagtgcgt ttcagcgtcg cgccggcgcc gtgttagtgg ccagccatct gcagagcttt 480  
ctggaagtga gttatcgtgt gttacgccat ctggcccagc cttaatctag a 531

<210> 6  
<211> 348  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Single chain G-CSF dimer polypeptide

<400> 6

Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu Lys  
1 5 10 15

Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu Gln  
20 25 30

Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu Val  
35 40 45



Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala Asp Phe Ala  
 275 280 285

Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala Pro Ala Leu  
 290 295 300

Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala Phe Gln Arg  
 305 310 315 320

Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser Phe Leu Glu  
 325 330 335

Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 340 345

Sequence

<210> 7  
 <211> 90  
 <212> DNA  
 <213> Homo sapiens

<400> 7  
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 cacagtgcac tctggacagt gcaggaagcc 90

<210> 8  
 <211> 522  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> DNA encoding single-chain G-CSF copy 1 (codon usage optimized for  
 expression in CHO cells)

<400> 8  
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 gttagaaaaa ttcaaggtga tgggtgctgt ttgcaagaaa aattgtgtgc tacttataaa 120  
 ttgtgtcatc cagaagaatt gggtttgttg ggtcattctt tgggtattcc atgggctcca 180  
 ttgtcttctt gtccatctca agctttgcaa ttggctgggt gtttgtctca attgcattct 240  
 gggttggttt tgtatcaagg tttgttgcaa gctttggaag gtatttctcc agaattgggt 300  
 ccaactttgg atactttgca attggatggt gctgattttg ctactactat ttggcaacaa 360  
 atggaagaat tgggtatggc tccagctttg caaccaactc aaggtgctat gccagctttt 420  
 gcttctgctt ttcaaagaag agctgggtgt gttttggttg cttctcattt gcaatctttt 480

ttggaagttt cttatagagt tttgagacat ttggctcaac ca

522

<210> 9  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> tag

<400> 9

His His His His His His  
1 5

<210> 10  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> tag

<400> 10

Met Lys His His His His His His  
1 5

<210> 11  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> tag

<400> 11

Met Lys His His Ala His His Gln His His  
1 5 10

<210> 12  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> tag

<400> 12

Met Lys His Gln His Gln His Gln His Gln His Gln  
1 5 10

<210> 13  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> tag

<400> 13

Met Lys His Gln His Gln His Gln His Gln His Gln His Gln Gln  
1 5 10 15

<210> 14  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> tag

<400> 14

Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu  
1 5 10

<210> 15  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> tag

<400> 15

Asp Tyr Lys Asp Asp Asp Asp Lys  
1 5

<210> 16  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> tag

<400> 16

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
1 5